on said gate insulating film;

depositing an n-type semiconductor layer on said amorphous semiconductor film through plasma CVD using a mixture gas containing silane, phosphine and hydrogen;

patterning said n-type semiconductor layer into source and drain regions;

B1 cont

forming an organic leveling film over said n-type semiconductor layer after the patterning thereof; and

forming a pixel electrode over said organic leveling film.

22. A method of manufacturing a liquid crystal device according to claim 21 wherein said n-type semiconductor layer is deposited at a temperature in a range from 250°C to 320°C.

23. A method of manufacturing a liquid crystal device according to claim 21 wherein said n-type semiconductor layer is deposited by using an r.f. power of 13.56 MHz and 0.05 to 0.20 W/cm^2.

24. A method of manufacturing a liquid crystal device according to claim 21 wherein said gate electrode comprises a doped silicon film and a molybdenum film formed thereon.

25. A method of manufacturing a liquid crystal device according to claim 21 wherein said gate electrode comprises aluminum.

26. A method of manufacturing a liquid crystal device according to

claim 21 wherein said gate insulating film comprises silicon oxide.

27. A method of manufacturing a liquid crystal device according to claim 21 wherein said gate insulating film comprises silicon oxide doped with fluorine.

28. A method of manufacturing a liquid crystal device according to claim 21 wherein said amorphous semiconductor film is deposited through plasma CVD.

B1 cont

29. A method of manufacturing a liquid crystal device according to claim 21 wherein said amorphous semiconductor film is deposited to a thickness of 500 to 5000 Å.

30. A method according to claim 21 wherein said silane is monosilane.

31. A method according to claim 21 wherein said organic leveling film directly contacts a portion of said amorphous semiconductor film between said source and drain regions.

32. A method of manufacturing a liquid crystal device comprising the steps of:

forming a gate electrode on an insulating surface of a substrate;

forming a gate insulating film over said gate electrode;

depositing an amorphous semiconductor film comprising silicon

on said gate insulating film;

depositing an n-type semiconductor layer on said amorphous semiconductor film through plasma CVD using a reactive gas including hydrogen (H_2) gas and a monosilane-based phosphine (PH_3) gas;

patterning said n-type semiconductor layer into source and drain regions;

forming an organic leveling film over said n-type semiconductor layer after the patterning thereof; and

forming a pixel electrode over said organic leveling film.

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33. A method according to claim 32 wherein said n-type semiconductor layer has a conductivity of about $2x10^1$ $(\Omega cm)^{-1}$.

34. A method according to claim 32 wherein said organic leveling film directly contacts a portion of said amorphous semiconductor film between said source and drain regions.

35. A method of manufacturing a liquid crystal device comprising the steps of:

forming a gate electrode on an insulating surface of a substrate;

forming a gate insulating film over said gate electrode;

depositing an amorphous semiconductor film comprising silicon on said gate insulating film;

depositing an n-type semiconductor layer on said amorphous semiconductor film through plasma CVD using a mixture gas containing silane, phosphine and hydrogen;

depositing a metal film on said n-type semiconductor layer;

patterning said n-type semiconductor layer and said metal film into source and drain regions, and source and drain electrodes, respectively;

forming an organic leveling film over said n-type semiconductor layer after the patterning thereof; and

forming a pixel electrode over said organic leveling film,

wherein said organic leveling film directly contacts a portion of said amorphous semiconductor film between said source and drain regions, and

wherein said source and drain regions have a same pattern as said source and drain electrodes, respectively.

B1 cont

36. A method according to claim 35 wherein said silane is monosilane.

37. A method of manufacturing a liquid crystal device comprising the steps of:

forming a gate electrode on an insulating surface of a substrate;

forming a gate insulating film over said gate electrode;

depositing an amorphous semiconductor film comprising silicon on said gate insulating film;

depositing an n-type semiconductor layer on said amorphous semiconductor film through plasma CVD using a mixture gas containing silane, phosphine and hydrogen;

patterning said n-type semiconductor layer into source and drain regions;

forming an organic leveling film over said n-type semiconductor

layer after the patterning thereof; and

forming a pixel electrode over said organic leveling film, wherein said pixel electrode extends over said channel region.

38. A method according to claim 37 wherein said silane is monosilane.

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39. A method according to claim 37 wherein said organic leveling film directly contacts a portion of said amorphous semiconductor film between said source and drain regions.

40. A method of manufacturing a liquid crystal device comprising the steps of:

forming a gate electrode on an insulating surface of a substrate;

forming a gate insulating film over said gate electrode;

depositing an amorphous semiconductor film comprising silicon on said gate insulating film;

depositing an n-type semiconductor layer on said amorphous semiconductor film through plasma CVD using a mixture gas containing silane, phosphine and hydrogen;

depositing a metal film on said n-type semiconductor layer;

patterning said n-type semiconductor layer and said metal film into source and drain regions, and source and drain electrodes, respectively;

forming an organic leveling film over said n-type semiconductor layer after the patterning thereof; and

forming a pixel electrode over said organic leveling film,